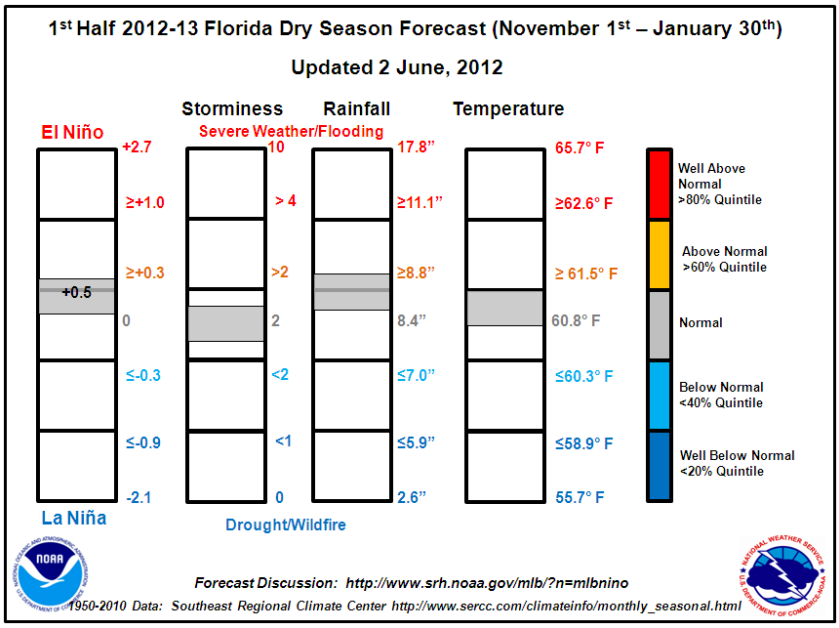
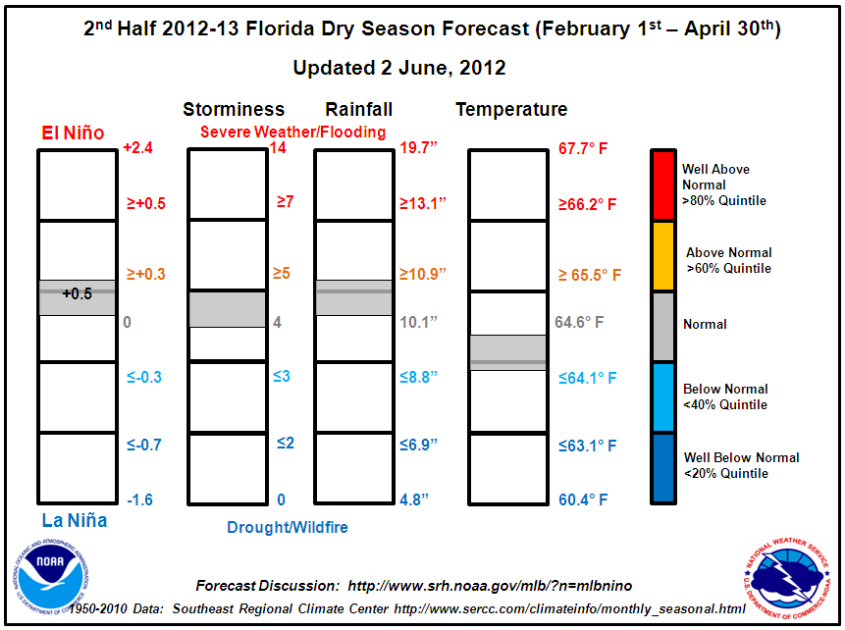
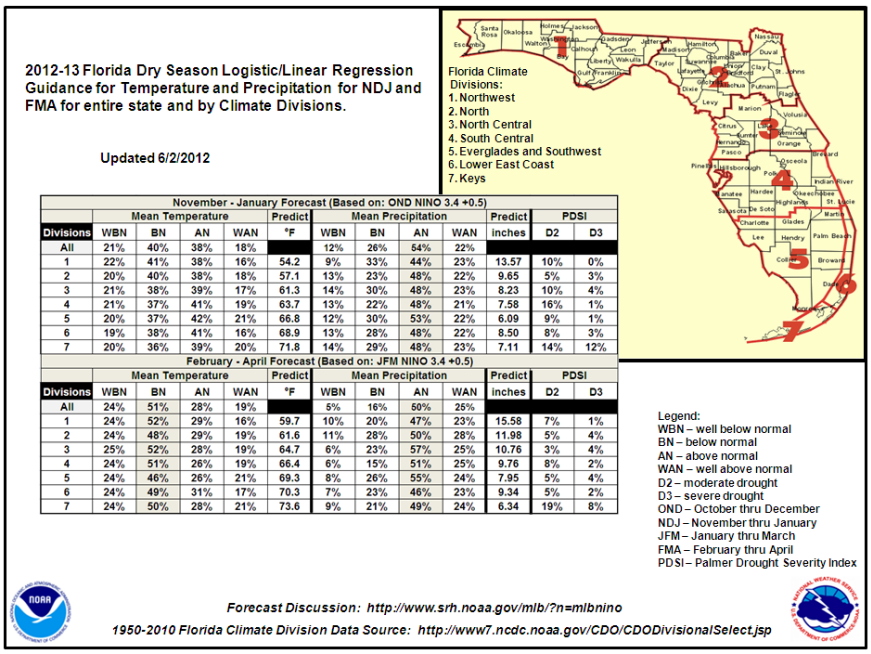
2012 – 2013 Dry Season Forecast for Florida

(Valid for period of November 1st – April 30th)





The latest statewide dry season forecast for storminess, rainfall and temperature. **How to interpret these forecast charts**.



2012-13 Florida Dry Season Logistic/Linear Regression Guidance for Temperature and Precipitation for NDJ and FMA for entire state and by Climate Divisions.

Updated 6/2/2012

Florida Climate Divisions:
1. Northwest
2. North
3. North Central
4. South Central
5. Everglades and Southwest
6. Lower East Coast
7. Keys

November - January Forecast (Based on: OND NINO 3.4 +0.5)

	Mean Temperature				Predict	Mean Precipitation				Predict	PDSI	
Divisions	WBN	BN	AN	WAN	°F	WBN	BN	AN	WAN	inches	D2	D3
All	21%	40%	38%	18%		12%	26%	54%	22%			
1	22%	41%	38%	16%	54.2	9%	33%	44%	23%	13.57	10%	0%
2	20%	40%	38%	18%	57.1	13%	23%	48%	22%	9.65	5%	3%
3	21%	38%	39%	17%	61.3	14%	30%	48%	23%	8.23	10%	4%
4	21%	37%	41%	19%	63.7	13%	22%	48%	21%	7.58	16%	1%
5	20%	37%	42%	21%	66.8	12%	30%	53%	22%	6.09	9%	1%
6	19%	38%	41%	16%	68.9	13%	28%	48%	22%	8.50	8%	3%
7	20%	36%	39%	20%	71.8	14%	29%	48%	23%	7.11	14%	12%

February - April Forecast (Based on: JFM NINO 3.4 +0.5)

	Mean Temperature				Predict	Mean Precipitation				Predict	PDSI	
Divisions	WBN	BN	AN	WAN	°F	WBN	BN	AN	WAN	inches	D2	D3
All	24%	51%	28%	19%		5%	16%	50%	25%			
1	24%	52%	29%	16%	59.7	10%	20%	47%	23%	15.58	7%	1%
2	24%	48%	29%	19%	61.6	11%	28%	50%	28%	11.98	5%	4%
3	25%	52%	28%	19%	64.7	6%	23%	57%	25%	10.76	3%	4%
4	24%	51%	26%	19%	66.4	6%	15%	51%	25%	9.76	8%	2%
5	24%	46%	26%	21%	69.3	8%	26%	55%	24%	7.95	5%	4%
6	24%	49%	31%	17%	70.3	7%	23%	46%	23%	9.34	5%	2%
7	24%	50%	28%	21%	73.6	9%	21%	49%	24%	6.34	19%	8%

Legend:
WBN – well below normal
BN – below normal
AN – above normal
WAN – well above normal
D2 – moderate drought
D3 – severe drought
OND – October thru December
NDJ – November thru January
JFM – January thru March
FMA – February thru April
PDSI – Palmer Drought Severity Index

Forecast Discussion: http://www.srh.noaa.gov/mlb/?n=mlbnino

1950-2010 Florida Climate Division Data Source: http://www7.ncdc.noaa.gov/CDO/CDODivisionalSelect.jsp

Logistic and linear regression guidance provided for the entire state of Florida and each of the seven climate divisions. Guidance has been provided for temperature, precipitation and the Palmer Drought Severity Index (PDSI) for NDJ and FMA. **How to interpret these forecast charts**.

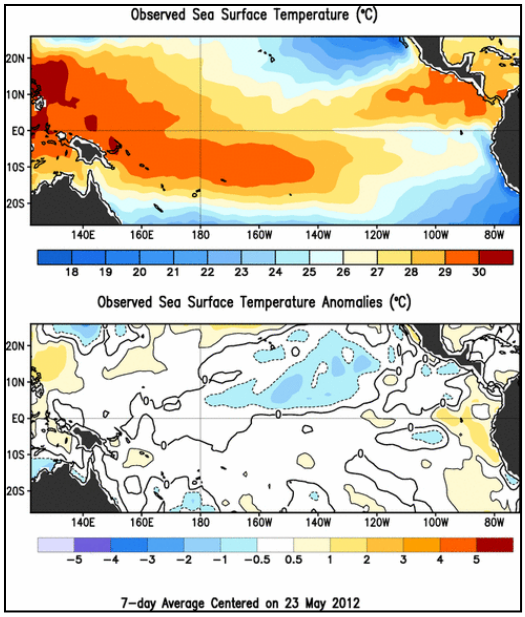
Shortcuts to Forecast Discussions

ENSO | Storminess | Rainfall | Temperature

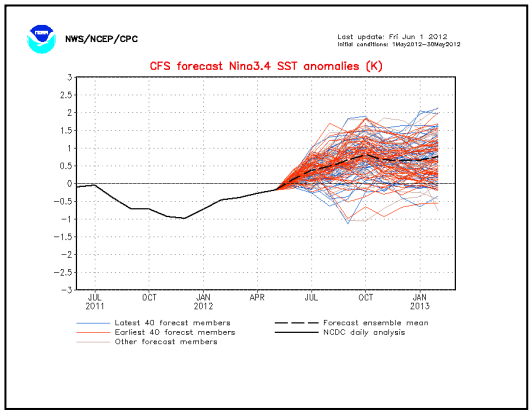
About This Product

This forecast is a result of research from the NWS in Melbourne, Florida on the EL Niño-Southern Oscillation (ENSO) and its impact on Florida's dry season. This research, conducted since early 1997, was produced in recognition of the fact that climatic fluctuations on regional and global scales have been shown to have a profound impact on Florida's weather from season to season. The importance of seasonal forecasts continue to increase as Florida's growing population becomes more sensitive to extreme weather events every year. Due to this sensitivity there is a need to better understand seasonal variability and seasonal forecasting of weather-related hazards.

This page assimilates a variety of information on seasonal forecasts for Florida in an easy-to-use format in order to keep society better informed. The primary purpose is to increase situational awareness by serving as an early warning system for significant dry season climatic variability in Florida and has four main goals: 1) Provide a clearinghouse for official NWS and NOAA seasonal forecasts and outlooks for the Florida region. 2) Provide an easy method to monitor meteorological measurements of the progress of the dry season through links to official NWS products and locally-produced, graphical products. 3) Provide graphical dry season forecasts and localized meteorological interpretation of official forecasts, and 4) Provide educational material to help users such as emergency managers, planners, forecasters and the public to better understand the physical relationships between ENSO and Florida weather and the predictability of these relationships to better aid preparedness and mitigation efforts. Potential users of this forecast should read the **disclaimer** before proceeding.



Averaged sea surface temperature (SST) and anomalies (°C) for the week centered on 23 May 2012. *Image from NOAA/NWS/CPC.*



Ensemble forecast for sea surface temperature (SST) anomalies in the Nino 3.4 region from the NOAA coupled forecast system (CFS). *Image from NOAA/NWS/NCEP.*

Latest ENSO Discussion:

The Climate Prediction Center (CPC) expects the current ENSO-neutral conditions to continue through summer. The **La Niña Advisory** has been cancelled. Details can be found in the latest CPC **Diagnostic Discussion**.

The **weekly SST analysis** centered on 23 May shows widespread neutral conditions across the entire tropical/equatorial Pacific except right along the coast of South America. Values for Niño 3.0 and 3.4 areas (**map of Niño areas**) for the week centered on 23 May were +0.2 and 0.0 respectively and indicative of neutral ENSO conditions.

The NOAA CPC CFS model for the **Niño 3.4** and **Niño 3.0** areas have been consistent in developing a weak El Niño this summer and continuing through the upcoming 2012-13 dry season. The consensus of most forecast **models** is also for a weak El Niño developing during the summer and all of them are indicating near zero or warmer conditions for the 2012-13 dry season. Because we are at such long range, most of the models indicate peaking of warm SST's during summer or late fall, but this hardly ever happens. ENSO events peak in very late fall or early winter. It is not unusual for the models to pick up on an El Niño signal and then develop it too fast. It is more likely that the models have the warming trend correct but that the peak will come later than indicated. Of course there is much uncertainty on whether an El Niño will develop and how strong it will be. A borderline weak El Niño of +0.5 is assumed for this initial Florida impact forecasts for the upcoming 2012-2013 dry season (November-April). A weak El Niño typically has a detectable impact on Florida dry season weather. Please refer to the **Storminess**, **Rainfall** and **Temperature** sections for discussion on expected Florida impacts**. This forecast will be updated by August 1st.**

Previous 2012-13 Forecast Discussions: This is the first for the new season.

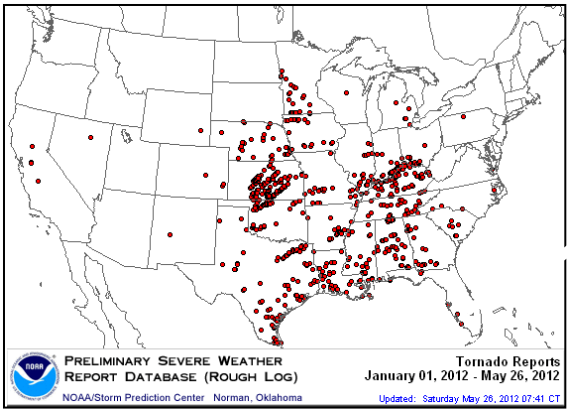
Our research over the years has shown that other teleconnections such as the **North Atlantic Oscillation (NAO), Arctic Oscillation (AO), Pacific North American Oscillation (PNA), and Madden-Julian Oscillation (MJO)** can play a major role in Florida Dry Season weather. Even when El Niño is moderate or strong these other teleconnections can act to enhance or suppress the impact of an ENSO, or cause extreme variability within the dry season on their own. Refer to our **2006** and **2007** research reports for background. There is also an hour-long recorded technical training session on the **physical relationship of ENSO to Florida weather** available.

For a more in depth discussion on ENSO and its effects on Florida dry season weather and climate see our **EL Niño-Southern Oscillation and Florida Educational Material.** For a formal definition of El Niño and La Niña see CPC's FAQ on **What is El Niño and La Niña**.

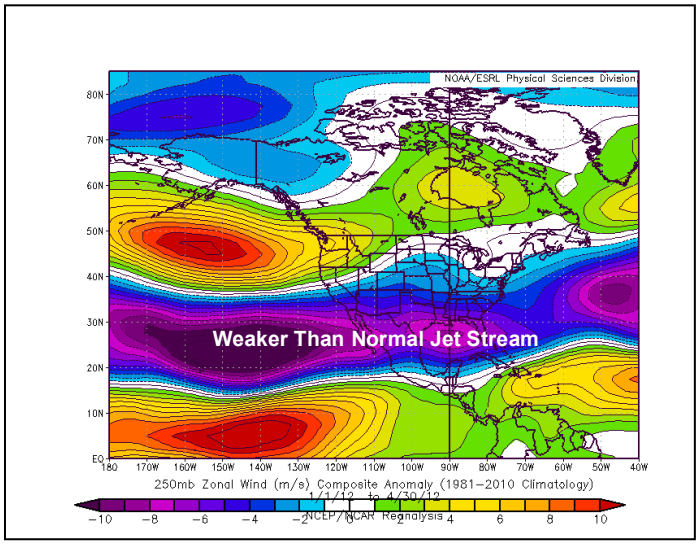
Related Links

CPC Tropical Pacific SST Forecast	CPC ENSO Diagnostic Discussion	CPC Monthly Atmospheric & SST Indices	CPC Weekly ENSO Update Products
CPC EL Niño/La Niña Page	Latest Daily SSTs	Summary of ENSO Models	NOAA CFS Model
Info on NOAA CFS Model	BOM ENSO Wrap-up	MEI ENSO Index	Long-Lead Prognostic Discussion
Univ. of Wisconsin Satellite Derived Winds & Analyses for Eastern N. Pacific	Ocean Winds from ASCAT Satellite	NOAA Geostationary Satellite Server	

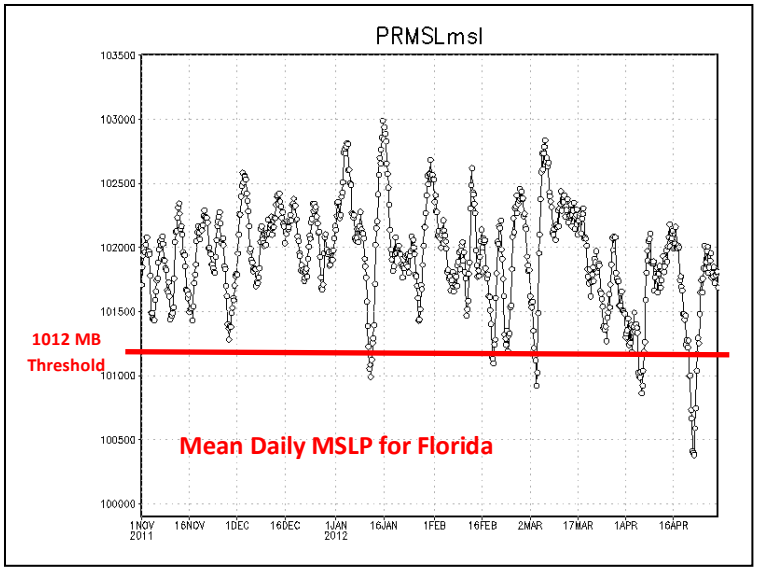
Storminess Discussion



U.S. tornado reports for January through May 2012. Florida had only 7 tornadoes and no significant tornado events while major outbreaks occurred to the north. This is typical during La Niña conditions.



Average Jet Stream strength anomaly for January through April 2012 shows significant influence of La Niña in weakening the southern branch that typically brings severe weather to Florida.



Only 5 extratropical storms met the significance test during the 6-month 2011-12 La Niña dry season – one below normal. Three of the five were marginal. During the last El Niño of 2009-10 - 18 storms were significant.

The final values of Nino 3.4 for 2011 OND and 2012 JFM that the Florida impact forecasts were based on were -1.02 and -0.78 respectively. These were the 10th and 11th coolest NINO 3.4 values since 1950 putting this past event in the moderate category and it did have a significant impact on 2011-12 dry season storminess. The mean jet stream and storm track remained north of Florida through most of the dry season and storminess and severe weather were below normal. Indeed, there were only 5 significant extratropical storms and 3 of these barely made the criteria. These storms had little impact on Florida other than to bring some beneficial rainfall. Severe weather was well below normal with only 7 tornadoes, none significant, from January through April – the traditional severe weather season.

This first storminess forecast for the 2012-13 dry season is based on the assumption of a minimal weak El Niño averaging +0.5 for OND and JFM. El Niño typically brings stormier than normal weather to Florida, but there is not a strong response signal for Florida storminess for this weak scenario. Logistic regression guidance for NDJ and FMA for the 7 climate divisions is in the 40 to 50% range. Based on the uncertainty of the ENSO forecast at this long range, normal storminess is forecast for the NDJ period (2 storms) and the upper end of normal is forecast for FMA (4-5 storms). **This forecast will be updated by August 1st.**

November - January (OND NINO 3.4 0.5)					
Statewide Storminess					
	WBN		BN	AN	WAN
All	9%		28%	38%	16%
February - April (JFM NINO 3.4 0.5)					
	WBN		BN	AN	WAN
All	17%		33%	46%	20%

Keep up to date with daily Hazardous Weather Outlooks out to 7 days for Florida from the NWS office responsible for your area. The NWS Melbourne office produces a

daily Graphical Hazardous Weather Outlook for east central Florida in addition to the 7-day text product as do most Florida NWS offices. For longer range outlooks the Climate Prediction Center provides a U.S. Hazards Assessment out to 2 weeks.

For a more in depth discussion on ENSO and its effects on Florida Storminess and Severe Storms check out our educational material on EL Niño-Southern Oscillation and Florida Storminess and on EL Niño-Southern Oscillation and Florida Dry Season Tornadoes.

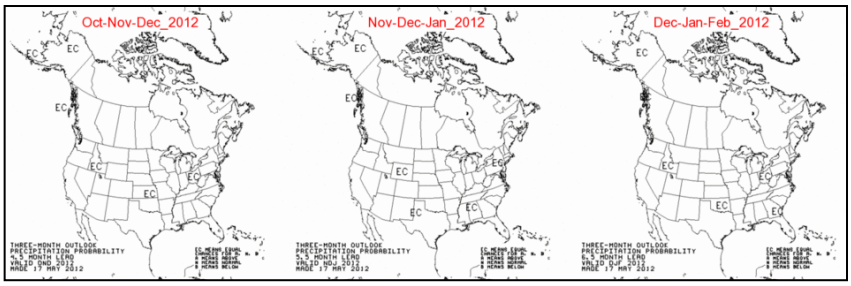
Major Dry Season Storms of 2011-2012

Weather Map	Storm Reports	Storm Surveys
January 11th, 2012	None	None
February 18-19, 2012	February 19th, 2012	None
March 3-4, 2012	March 3-4, 2012	NWS Tallahassee (mostly in Georgia)
April 6, 2012	April 6, 2012	None
April 21-22, 2012	April 21-22, 2012	None

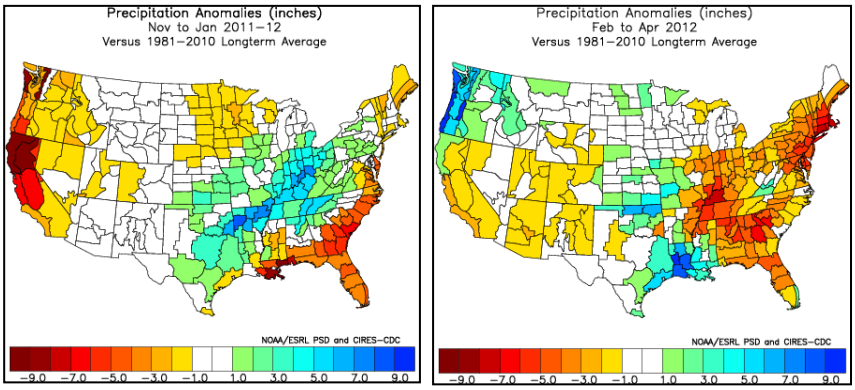
Related Links

	CPC-NWS Suite of Official Forecasts	CPC 500mb Height Anomalies	CPC 200mb Height Anomalies	CPC 3-day IR Temperature Animation	NCEP 2-week 500mb Height Forecast Ensemble
Fronts day 3-7	MJO Monitoring	Arctic Oscillation	North Atlantic Oscillation	Pacific-North American Oscillation	NCEP Historical Analyses
	Storm Reports			Daily Weather Maps	CPC Storm Tracks
CDC 250mb Wind Animation	CDC Sea Level Pressure Animation	CDC 500mb Height Animation	CDC 7-day Average of 250mb Winds	CDC Outgoing Longwave Radiation	NCEP 2-week MSLP Forecast Ensemble

Rainfall Discussion



The latest Climate Prediction Center's (CPC) precipitation forecasts for November through February.



Rainfall anomalies for this past NDJ and FMA.

The final values of Nino 3.4 for 2011 OND and 2012 JFM that the Florida impact forecasts were based on were -1.02 and -0.78 respectively. These were the 10th and 11th coolest NINO 3.4 values since 1950 putting this past La Niña event in the moderate category and it did have a significant impact on 2011-12 dry season rainfall. The mean jet stream and storm track remained north of Florida throughout most of the dry season Typical of La Niña conditions and rainfall was below normal for all climate division for all periods except for the lower southeast coast in FMA where localized slightly above normal rainfall fell. Despite the widespread below normal rainfall enough rain fell at fortuitous times during the dry season to forestall serious drought and fire concerns in most areas.

This first rainfall forecast for the 2012-13 dry season is based on the assumption of a minimal weak El Niño averaging +0.5 for OND and JFM. El Niño typically brings wetter than normal conditions to Florida, but there is not a strong response signal for Florida rainfall for this weak scenario. Logistic regression guidance for NDJ and FMA favor above normal rainfall (40 to 50% range). Based on the uncertainty of the ENSO forecast at this long range, the forecast for the NDJ and FMA periods is for rainfall at the upper end of normal. **This forecast will be updated by August 1st.** The NWS CPC forecast is for equal chances of above or below normal rainfall for Florida next winter.

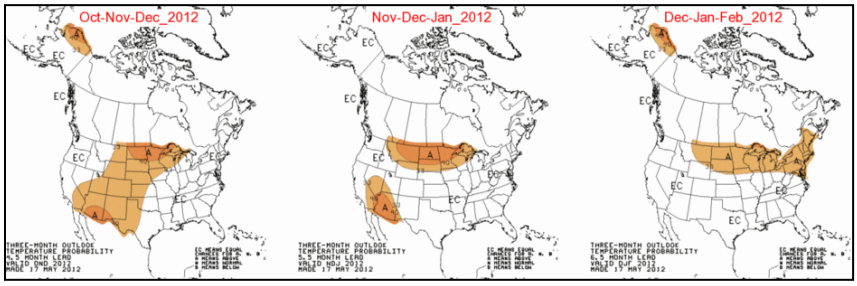
For a more in depth discussion on ENSO and its effects on Florida's Rainfall see our

Florida's Dry Season Rainfall and El Niño-Southern Oscillation Educational Material.

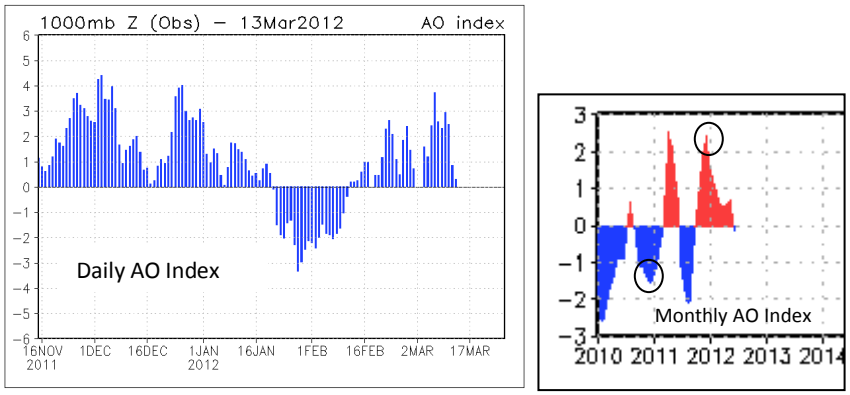
Monitor Latest Rainfall Trends	
City	***Days into the Past***
Tallahassee	30 | 90 | 365
Jacksonville	30 | 90 | 365
Tampa	30 | 90 | 365
Miami	30 | 90 | 365
Orlando	30 | 90 | 365

RELATED PRECIPITATION LINKS	
Climatological Data	CPC U.S. Drought Assessment
CPC 6-10 Day Rainfall Outlook	Rainfall Analysis
SERFC Water Resources Outlook	CPC/NCEP 13 Month Seasonal Precip Outlook
Southeast Climate Consortium	SERCC Rain Perspectives

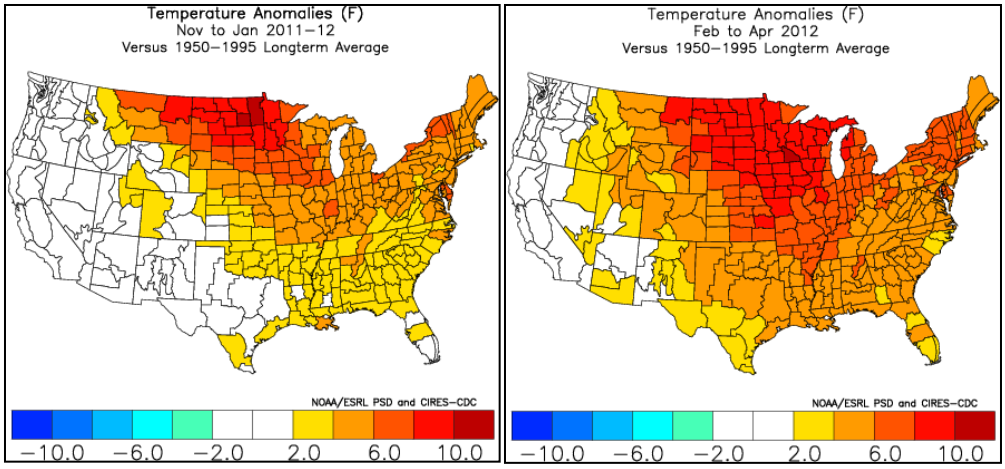
Temperature Discussion



The latest Climate Prediction Center's (CPC) temperature outlook for November to February.



Arctic Oscillation Index



Temperature anomalies for this past NDJ and FMA.

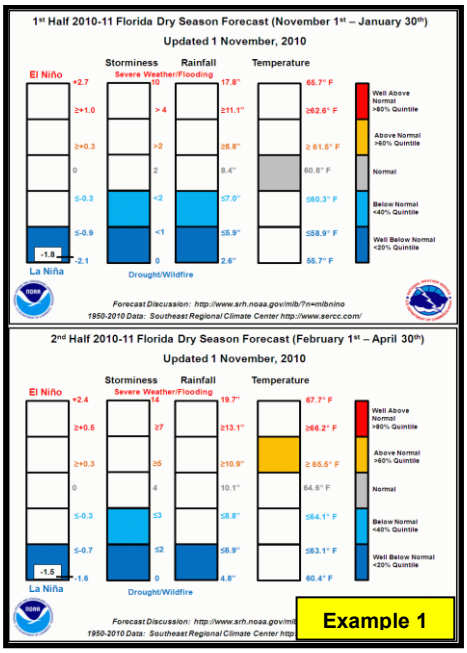
The final values of Nino 3.4 for 2011 OND and 2012 JFM that the Florida impact forecasts were based on were -1.02 and -0.78 respectively. These were the 10th and 11th coolest NINO 3.4 values since 1950 putting this past La Niña event in the moderate category and it did have a significant impact on 2011-12 dry season temperature. The mean jet stream and storm track remained north of Florida throughout most of the dry season typical of La Niña conditions, and the predominant positive phase of the Arctic Oscillation also played a significant role in enhancing the impact of the moderate La Niña leading to warmer than normal temperatures and especially a lack of major freeze events, especially in the FMA period. This is in sharp contrast to the cold 2010-11 La Niña dry season when a strong negative Arctic Oscillation phase dominated the ENSO signal. The logistic regression guidance was especially good as it indicated generally equal chances of above/below normal temperature for the NDJ period, but had a strong warm signal for the FMA period and this verified nicely.

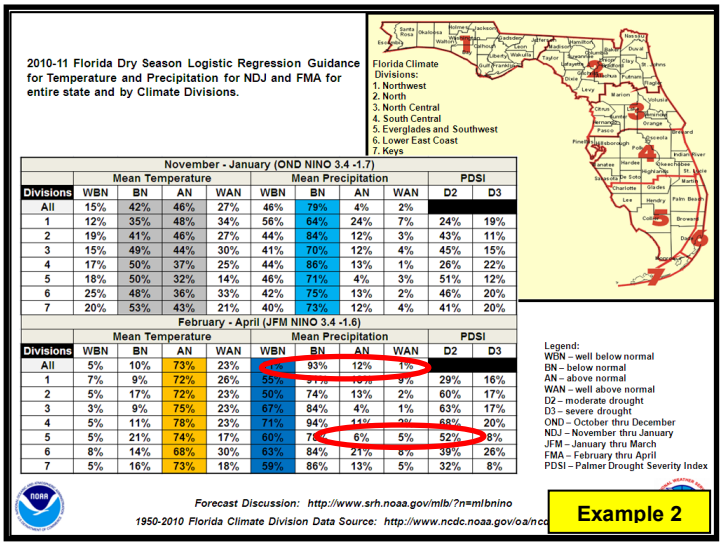
This first temperature forecast for the 2012-13 dry season is based on the assumption of a minimal weak El Niño averaging +0.5 for OND and JFM. El Niño typically favors cooler temperatures, but there is not a strong response signal for Florida rainfall for this weak scenario. Logistic regression guidance for NDJ is about split between above and below normal chances and near normal temperatures are forecast, FMA guidance favors below normal temperatures (around 50% range). Based on the uncertainty of the ENSO forecast at this long range, the forecast for NDJ is for normal temperatures and the forecast for the FMA is for temperatures at the upper end of normal. **This forecast will be updated by August 1st.** The NWS CPC forecast is for equal chances of above or below normal rainfall for Florida next winter.

RELATED TEMPERATURE LINKS	
Climatological Data	CPC Temperature Outlooks
CPC 6-10 Day Temperature Forecast	Florida Climate Center
SSD Daily Snow Cover Analysis	CDC 7-Day Surface Temperature Anomalies
NCEP Ensemble of Mean 850mb Temperature Anomalies	SERCC Temperature Perspectives

Monitor Latest Temperature Trends	
City	*Days into the Past*
Tallahassee	30 | 90 | 365
Jacksonville	30 | 90 | 365
Tampa	30 | 90 | 365
Miami	30 | 90 | 365
Orlando	30 | 90 | 365

How to Interpret the Florida Dry Season Forecast Charts





The Florida Dry Season Forecast (1 November through 30 April), first started in 2001, is intended to serve as an early warning of significant impacts from climatic variability for planners and decision makers. The ENSO signal (La Niña to El Niño) is the primary input to the forecast. The dry season forecast for the number of significant extratropical storms expected to impact Florida, average rainfall, and average temperature is divided into two three-month periods: November through January (NDJ), and February through April (FMA). The ENSO state is represented by the Niño 3.4 index averaged from October through December (OND) for the NDJ forecast values and January through March (JFM) for the FMA forecast values (a one-month lead).

The ENSO state and forecasts of storminess, rainfall and temperature are divided into 5 categories or quintiles: well below normal, below normal, normal, above normal, and well above normal. The historical ranges of values for each category are shown on the right side of the forecast bar charts and were computed from 1950-2010 data (temperature and rain data: Southeast Regional Climate Center http://www.sercc.com/ Niño 3.4 data: http://www.cpc.noaa.gov/data/indices/sstoi.indices; Storminess data is produced at NWS Melbourne Florida).

The potential impacts from extreme climatic variability of storminess and rainfall are indicated from drought and wildfire for well below normal to severe weather and flooding for well above normal. However, for temperature the risk of a devastating freeze is not well correlated with overall well below normal temperatures. Indeed, devastating freezes

are usually more likely during ENSO neutral conditions. The temperature forecast is thus intended to be used as a broad measure of temperature conditions. Likewise, due to their nature these statewide average forecasts are not applicable to a specific location and time within the dry season. For example, during a strong La Niña the threat of drought and wildfire is greatly increased in Florida. The associated negative rainfall and temperature impacts may not occur in every part of Florida, but it is highly likely they will impact some areas of Florida quite severely and the forecast for all of Florida serves as an early warning for planning and mitigation purposes.

The dry season forecast is shown using two separate charts, the first (example 1) provides a forecast for the entire state, while the second (example 2) provides logistic regression guidance for the entire state *and* its seven climate divisions.

Example 1: These charts illustrate the dry season forecast for the entire state of Florida, divided into two three-month periods. While the predicted Niño 3.4 value is the most heavily weighted component, these forecasts are a subjective synthesis of locally developed statistical guidance along with a variety of other observations and forecasts such as those linked to in this document and thus are the best predictions at the time issued in the professional opinion of the forecaster. The actual forecast for each element is indicated by the level of the colored bar from normal, either above (toward red) or below (toward blue) normal. For instance, below normal rainfall is forecasted for the NDJ period, however; guidance suggests well below normal rainfall for FMA.

Example 2: Dry season logistic regression guidance of temperature, rainfall and drought severity for Florida and its 7 climatic divisions are also provided for the NDJ and FMA periods for greater spatial detail. The logistical regression probabilities for each forecast element and category are shown on the chart as an objective decision aide. This guidance is also strongly considered in assigning the forecast categories to the statewide forecast. Storminess is not included in this forecast as significant dry season storms typically impact large portions of the state, however associated severe weather and flooding may be very localized. Additional clarifying information will typically be included in the monthly updates and the forecast graph is meant to be used in concert with the related discussions within this document.

For instance, in the example chart from December 2010 for Division 3 for the FMA period (bottom chart) the subjective forecast of Niño 3.4 for JFM is -1.6 (strong La Niña). Based on this value there is a 67% chance of rainfall being well-below normal and an 84% chance of below normal rainfall for Division 3. Probabilities of above normal and well above normal are 4% and 1% respectively. The probabilities for each element do not add up to 100%; each quintile category is a separate forecast of dichotomous

conditions. In other words a 60% chance of well-below normal means that there is a 40% chance of greater than well below normal and so on. The color-coded forecast quintiles from the statewide forecasts are indicated on the objective guidance table as a cross reference.

The discussions will address the issue of uncertainty and other factors and should be used to supplement the forecast charts. The first long-range forecast of the upcoming dry season is released in June and the Niño 3.4 values are based entirely on long-range forecasts in monthly updates through September. The most critical forecast released around November 1st for the start of the dry season contains the actual Niño 3.4 value for October and forecasts for the following months. The forecast is updated throughout the dry season, but its value as an early warning device diminishes as the season progresses.

For a more in depth information on ENSO and its effects on Florida dry season weather and climate see our EL Niño-Southern Oscillation And Florida Educational Material and the references below.

Forecast Questions: Bart.Hagemeyer@noaa.gov

REFERENCES (Abbreviated)

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Hagemeyer, B. C., and R. A. Almeida, 2002: Experimental Forecasting of Dry Season Storminess over Florida and the Southeast United States from the ENSO Signal using Multiple Linear Regression Techniques. Preprints, 16th Conference on Probability and Statistics in the Atmospheric Sciences and 13th Symposium on Global Change and Climate Variations, Amer. Meteor. Soc., Orlando, FL, J3.10.

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Disclaimers:

This web page has four main goals: **1)** Provide a clearinghouse for official NWS/NOAA seasonal forecasts and outlooks for the Florida region. **2)** Provide an easy method to monitor meteorological measurements of the progress of the seasons through links to official NWS products and locally-produced, graphical products. **3)** Provide graphical dry season forecasts and localized meteorological interpretation of official forecasts, and **4)** Provide educational material to help users such as emergency managers, planners, forecasters and the public to better understand the physical relationships between ENSO and Florida weather and the predictability of these relationships to better aid preparedness and mitigation efforts.

The achievement of these goals involves the development of graphical products, interpretative adaptive forecasts and educational material that each have some component of risk that should be understood by users.

Goal 1 is met by linking to information from official NOAA/NWS sources, primarily the Climate Prediction Center (CPC) and users should review the disclaimers associated with these products on the CPC web site and base their risk of use from information contained there. **Risk of use - Low .**

Goal 2 is met by providing links to official climate monitoring information and by providing locally developed graphics so that users can monitor the progress of the seasons versus normal and assess the progress of the forecasts. The monitoring graphics do not contain any forecast components and are constructed using official data; however, errors could arise during data processing and plotting of these products. In addition, the quantities represented are in some cases a synthesis of various meteorological parameters and calculations and an understanding of what they represent is necessary for proper interpretation. **Risk of use - Low .**

Goal 3 is met by providing products intended to forecast selected mean atmospheric conditions and accumulated atmospheric phenomena over the breadth of Florida and the adjacent northeast Gulf of Mexico and the span of the 6-month dry season. Three forecast product groups are produced: 1) a Graphical Seasonal Outlook - a summary of ENSO, Storminess, Precipitation, and Temperature outlooks that are an adaptive blend of seasonal forecasts and official forecasts, 2) a textual seasonal forecast discussion that expands on the reasoning behind the Graphical Seasonal Outlook, and 3) raw dry season forecast parameters presented as time series of actual values versus predicted values. Their purpose is to provide a representation of statewide/regional meteorological impacts expected from 1 November to 30 April each dry season relative to normal to provide early warning of significant climatic extremes to increase situational awareness. Users should keep abreast of the day-to-day hazardous weather threats within a season by referring to NWS Graphical Hazardous Weather Outlook pages**:** Melbourne Key West Miami Tampa Jacksonville Tallahassee Mobile**.**

Extreme weather events can occur within the forecast area and have significant local impacts even though the seasonal measures forecast here are not extreme. For example, record breaking rainfall could occur over an area of, say, several counties, while the broader forecast area remains in serious long-term drought. Likewise, a singular extreme weather event such as the "Superstorm" of March 1993 could occur and cause widespread destruction and human impact within an otherwise quiescent season. Potential users should review all of the linked supporting educational material to better understand the forecast process, confidence factors, and assumptions of physical relationships between ENSO and Florida weather before proceeding:

EL Niño-SOUTHERN OSCILLATION (ENSO) STORMINESS SEVERE STORMS

PRECIPITATION TEMPERATURE

The seasonal forecasts employ multiple linear regression and logistic regression techniques and are based on the official observed and forecast Niño 3.4 and 3.0 values from the CPC and historical weather data for the Florida region. Serious errors can arise from the fact that the predictive equations are based on CPC forecasts of Niño 3.4 and 3.0 as much as 12 months in advance. The accuracy of these forecasts will have a bearing on the accuracy of the regression equations. ENSO is the dominate environmental factor in dry season weather extremes in Florida, but it is not the only factor. Forecast verification is generally quite good for well developed moderate to strong La Niña/El Niño trends. The multiple linear/logistic regression equations do not fully account for all the variability in the atmosphere, and can have significant deviation from reality in some seasons when the ENSO signal is weak or near neutral. Other phenomena such as the North Atlantic Oscillation (NAO), Arctic Oscillation (AO) and Pacific-North American (PNA) Oscillation may play important roles in some years, and these are neither well understood nor currently forecast at long range. Our **research reports** provide more background on these oscillations and issues of predictability.

There is a well-documented concern of providing decision makers with too many forecasts or with competing/conflicting forecasts from which to choose. A serious attempt has been made to address these concerns. These forecasts are meant to supplement - not replace - the official NWS CPC seasonal and winter outlooks by providing more detail and adaptive meteorological interpretation of the impact of predicted climatic events on the Florida region. Generally, due to the nature of the forecast it will fall within the general boundaries of the official temperature and precipitation forecast. However, the forecasts of severe weather and storminess fall outside the traditional realm of seasonal forecasting and may be considered controversial. **Risk of use – Low in well-developed EL Niño/La Niña conditions and low to moderate in neutral or very weak ENSO conditions.**

Goal 4 is met by providing customized educational information on Florida seasons, the physical relationships between ENSO and Florida weather, and the predictability of

these relationships. This information is generally in a constant state of review and update and should be considered a work in progress. Research continues at a rapid pace around the globe on the impact of ENSO and other climatic forces and it is nearly impossible to keep up with the latest breaking research. The information contained here, although presented in one form or another at various American Meteorological Society and National Weather Association Conferences and Symposia and published in Preprint volumes of their proceedings, has not been subject to formal peer review and may be controversial and contrary to other research results. **Risk of use – Low.**

This page is intended to be updated monthly after the preceding month's data and updated CPC ENSO forecasts are available. There is no guaranty that this page will be updated in a timely manner due to higher priority duties or other circumstances beyond our control or that this page will continue to be able to be maintained.

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